

PATENT ABSTRACTS OF JAPAN

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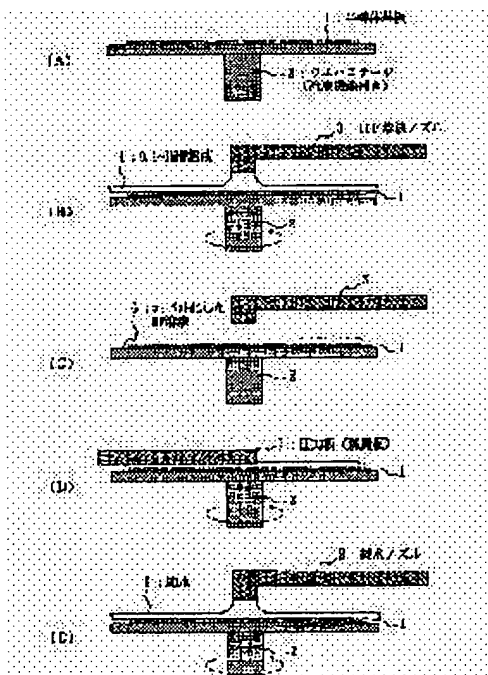
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(54) METHOD AND APPARATUS FOR REMOVING FOREIGN MATTER FROM SEMICONDUCTOR DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a method and an apparatus for removing dust from a semiconductor device in which structural damage or concentration of foreign matters to the center of a semiconductor substrate can be removed without requiring high pressure or ultrasonic wave.

SOLUTION: When foreign matters are removed from a semiconductor device, a semiconductor substrate 1 is fixed to a water stage 2 having refrigerating function. The semiconductor substrate 1 is then spin coated with 0.1-1% HF solution 4 and the temperature of the wafer stage 2 is lowered down to -1 to -150° C in order to bring the HF solution 4 into sherbet state. It is then pressed against a pressure plate 7 and the wafer stage 2 is rotated to raise the temperature of the wafer stage 2 up to a normal level in order to melt the the HF solution 6 in sherbet state before rotary rinsing the semiconductor substrate 1 with water.



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CLAIMS

[Claim(s)]

[Claim 1] (a) The process which fixes a semi-conductor substrate to a wafer stage with a frozen function, (b) The process which carries out rotation spreading of the HF solution 0.1 - 1% on this semi-conductor substrate, (c) The process which -1--150 degree C is made to lower said wafer stage, and sherbet-izes said HF solution, (d) The process which a pressure plate is forced [process] on this sherbet-ized HF solution, and rotates said wafer stage, (e) The tailing approach of the semiconductor device which is made to carry out the temperature up of said semi-conductor substrate to ordinary temperature, combs said sherbet-ized HF solution and is characterized by giving in order the process which carries out rotation rinsing.

[Claim 2] (a) A wafer stage with a frozen function, and a means to fix a semi-conductor substrate on (b) this wafer stage, (c) The means which carries out rotation spreading of the HF solution 0.1 - 1% on said semi-conductor substrate, (d) A means to make -1--150 degree C lower said wafer stage, and to sherbet-ize said HF solution, (e) The pressure plate forced on this sherbet-ized HF solution, (f) A means to force said pressure plate on said sherbet-ized HF solution, and to rotate said wafer stage, (g) Tailing equipment of the semiconductor device which is made to carry out the temperature up of said semi-conductor substrate to ordinary temperature, combs said sherbet-ized HF solution and is characterized by providing the means which carries out rotation rinsing.

[Translation done.]

JAPANESE [JP,10-022245,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the tailing process sectional view of a semiconductor device showing the example of this invention.

[Drawing 2] It is the sectional view showing the example of the pressure plate used at the tailing process of a semiconductor device which shows the example of this invention.

[Description of Notations]

- 1 Ten Semi-conductor substrate
- 2 Wafer Stage (with Frozen Function)
- 3 HF Solution Nozzle
- 4 0.1 - 1%HF Solution
- 6 11 Sherbet-ized HF solution
- 7 12 Pressure plate (baffle)
- 8 Pure Water
- 9 Pure-Water Nozzle
- 12a Taper
- 13 Direction Which Presses Down Pressure Plate

[Translation done.]

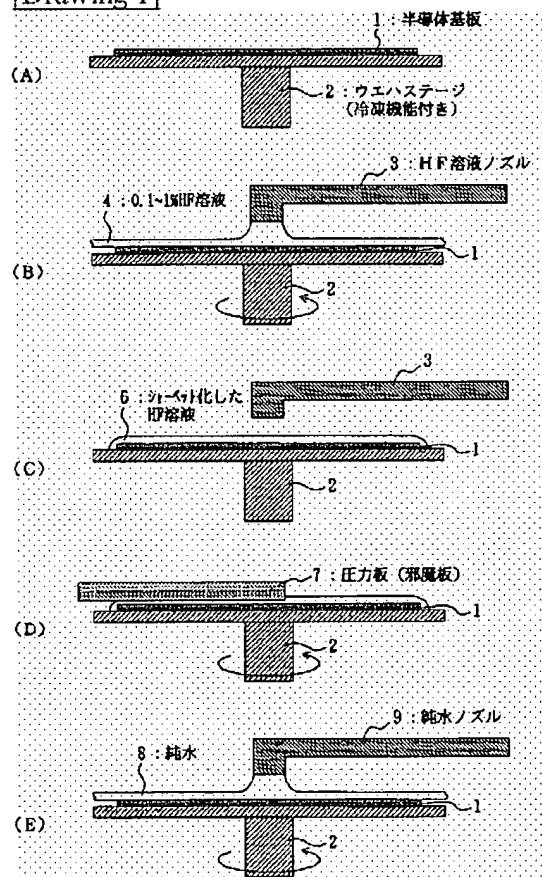
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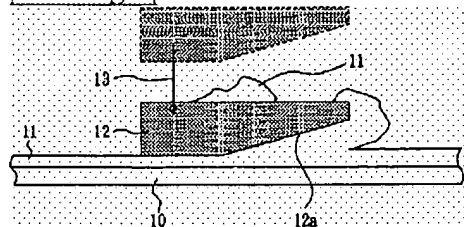
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DRAWINGS

[Drawing 1]



[Drawing 2]



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